SouthWest University

Lab report

Couse name Principle of programming

Semester 2021 - 2022 - 1

Grade 2021 Class ComputerSinceandTecnology 3

Student No. 222021321102065

Name Qianzhe Cai

Tutor Ya Li

School of Computer and Information Science

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| Lab 1 | | | **Practicing on conditional statements and loops.** | | | | | |
| Issue Date | | 2021.11.10 | | | Experimental types | | □validation experiment,  □comprehensive experiment  ☑design experiment | |
| Goal  • You will practice using conditional statements and while loops.  Assignment  1. Write a program that uses a while loop to produce this pattern:    2. Write a program that uses a For loop to produce Chinese multiplication table | | | | | | | | |
| * Experimental contents and process   1.Observing the pattern and then I found the number of ‘\*’ in a line is (2\*N-1)(N is the line number) and it’s a odd number. The first ‘\*’ should be at the middle of the line. So I can print the first ‘\*’ at the place of N( (2\*N-1+1)/2 ) on the first line. At every place, print a ‘\*’ and a ‘ ’.  2. Observing the sample, in every multiplication in one line, the first multiplier is increasing by 1 each time and the second multiplier is equal to the number of rows. So I can use a double loop to realize it. | | | | | | | | |
| * Screen shots of the Python IDLE showing the output results of running your Lab code. * 1. 2. | | | | | | | | |
| * Lab Code   1.  line = int(input("请输入图案行数"))  i = 1  while(i < line+1) :      j = 0      while(j < line-i) :          print("  ", end="")          j += 1      j = 0      while(j < 2\*i-1) :          print("\* ", end="")          j += 1      i += 1      print("")    2.  for i in range(1, 10) :      for j in range (1, i+1) :          print("{}\*{}={: <4}".format(j,i,i\*j),end="")  print("") | | | | | | | | |
| * Experimental summary/ Analysis   We should be proficient in the application of various functions of python and be good at observation. When programming, first clarify the ideas, and then solve the problems one by one. | | | | | | | | |
|  | Criteria | | | | | | | scale |
| Goal | | | | | | | A B C D E |
| Process | | | | | | |
| Design | | | | | | |
| Algorithm | | | | | | |
| Code | | | | | | |
| Data/Results | | | | | | |
| summary | | | | | | |
| written | | | | | | |
| Score | | |  | | : | | |
| * Lab Evaluation Criteria   A: This lab is exceptional, working and meeting all of the specifications.The code is exceptionally well organized and very easy to follow.The code could be reused as a whole or each routine could be reused.The documentation is well written and clearly explains what the code is accomplishing and how.The program was delivered on time.The code is extremely efficient without sacrificing readability and understanding.  B: This lab is very good--works and produces the correct results and displays them correctly. It also meets most of the other specifications. The code is fairly easy to read. Most of the code could be reused in other programs. The documentation consists of embedded comment and some simple header documentation that is somewhat useful in understanding the code. The program was delivered within a week of the due date. The code is fairly efficient without sacrificing readability and understanding.  C: This lab is adequate, with only minor deficiencies. The program produces correct results but does not display them correctly. The code is readable only by someone who knows what it is supposed to be doing. Some parts of the code could be reused in other programs. The documentation is simply comments embedded in the code with some simple header comments separating routines. The code was within 2 weeks of the due date. The code is brute force and unnecessarily long..  D: This lab shows some effort but has at least one major deficiency.The program is producing incorrect results. The code is poorly organized and very difficult to read. The code is not organized for reusability. The documentation is simply comments embedded in the code and does not help the reader understand the code. The code was more than 2 weeks overdue. The code is huge and appears to be patched together.  E: This lab is poorly written and shows very little effort or understanding. | | | | | | | | |